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# PROGRESS

*of the*

## Barberry Eradication Campaign

*in*

Illinois in 1930

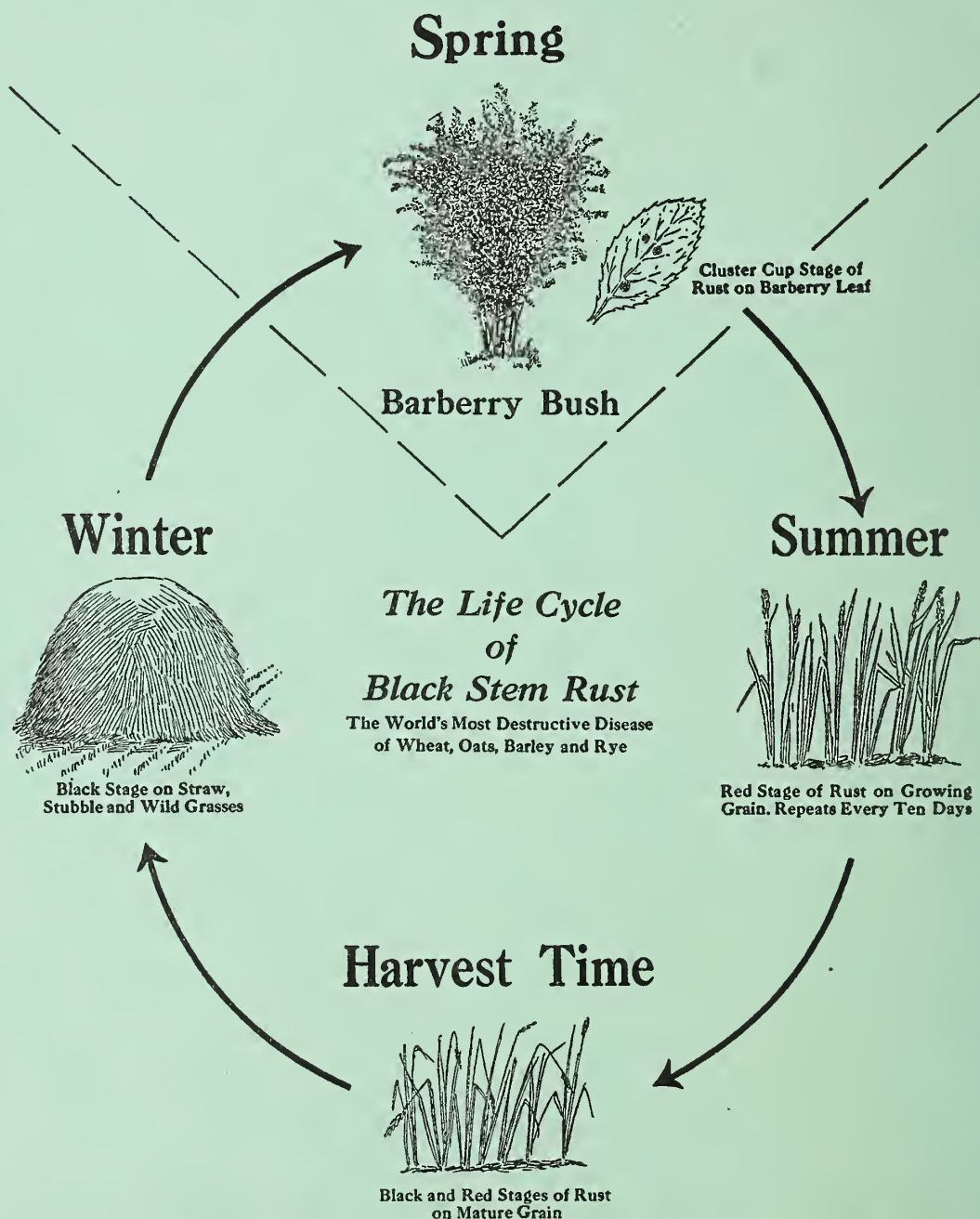
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U. S. Department of Agriculture



*Black Stem Rust Spread From This Common Barberry Bush  
To Near-by Grain Fields Causing Severe Damage*

*Barberry Eradication Pays*

# Remove the Barberry and Break the Rust Cycle



All Common Barberries act as starting points for Black Stem Rust early each spring. By destroying the barberry the early spring source of black stem rust is eliminated. The Common Barberry provides a means to bridge the gap between the black stage on grain in the fall and the red stage of the rust on grains and grasses the following spring.

**BOOST BARBERRY ERADICATION—A PRACTICAL RUST CONTROL MEASURE**



# PROGRESS OF THE BARBERRY ERADICATION CAMPAIGN

IN ILLINOIS, 1930

By Robert W. Bills\*, Agent,  
Office of Barberry Eradication, Bureau of Plant Industry,  
United States Department of Agriculture.

## INTRODUCTION

Black stem rust is one of the oldest plant diseases known to man. It attacks spring wheat, winter wheat, oats, barley, and rye, frequently causing severe damage to these crops. The average annual loss of small grains in Illinois due to epidemics of this disease has amounted to more than 3,000,000 bushels during the past 15 years.

The common barberry bush has been proved a necessary host if stem rust is to develop in epidemic form in the Northern States. It has been under the ban of the law since 1918 in each of the States engaged in barberry eradication. At that time a definite program was started to control this disease which was becoming more and more destructive each year. All common barberry bushes previously planted in these States were outlawed and their further sale or propagation was prohibited.

Common barberry bushes were known to be growing in many cities of Illinois and it was there that the work of eradication commenced. It was soon apparent, however, that the prevalence of common barberry bushes had been under estimated. There were many thousands of them found growing on farms and village properties. In many localities they had escaped cultivation and become established in the uncultivated areas.

The survey and eradication activities were begun in rural districts in 1920. The work has progressed county

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\*Leader of Barberry Eradication in Illinois.

by county from north to south within the State. At the close of the first survey in 1930 common barberry bushes had been located and destroyed on more than 10,000 city properties and 3,000 farms.

The aim in the early part of the campaign was to remove the rust-spreading bushes as fast as possible, giving first attention to the principal grain-growing areas. As a result speed of survey and eradication was urged at the expense of thoroughness. The advisability of making rapid and extensive surveys can be seen when we consider the great number of bushes destroyed. Most of these bushes were bearing fruit, and had they been allowed to remain only a few years longer birds and other agencies would have scattered the seed to many more inaccessible locations about the countryside.

After the first survey was well under way it was found necessary to reinspect many locations where barberry bushes had escaped from cultivation.

Ten counties have been covered completely by an intensive survey and thus far 104,000 bushes have been found on 573 city properties and 822 farms.

#### SURVEY ACTIVITIES 1930

Intensive survey for common barberries was carried on in 15 counties in Illinois during 1930 and interested people reported barberry bushes in 12 different counties. A total of 14,214 barberry bushes and 2,854 seedlings was destroyed during the year.

Thirty-four field men were employed on survey during the season. Eight of these were hired by the Illinois Department of Agriculture, while the remainder were employed by the United States Department of Agriculture. After com-

# Black Stem Rust

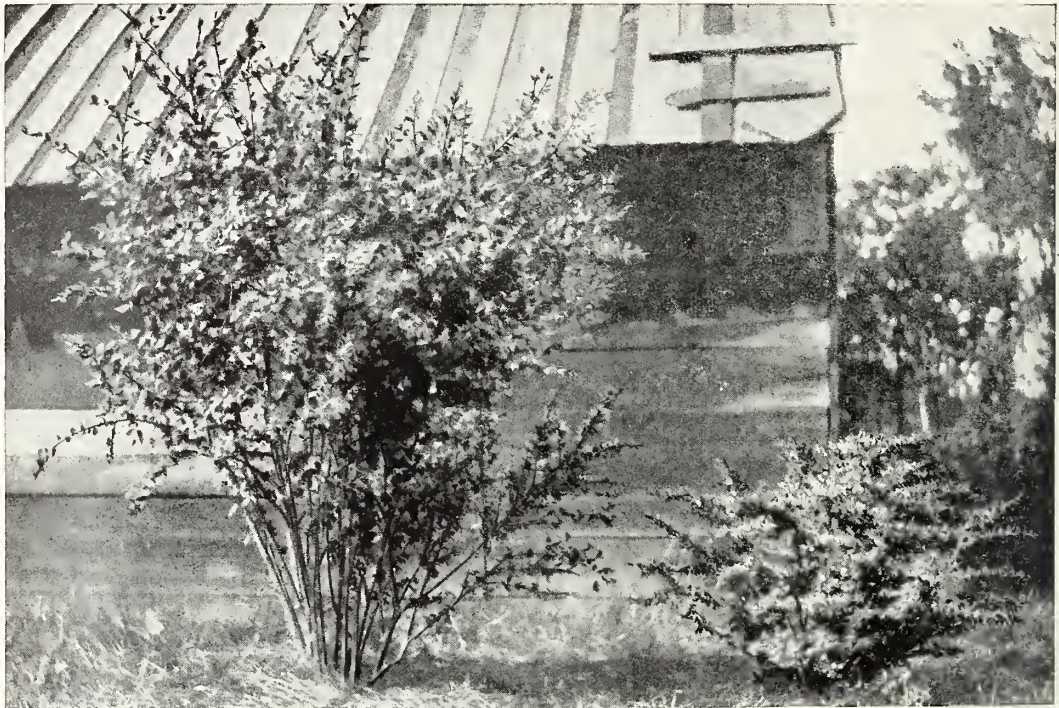
spreads from Common Barberry Bushes  
to Wheat, Oats, Barley, Rye and many  
Grasses



Black stem rust of small grains is caused by a tiny parasitic plant. In the Northern States it lives for a time each spring on the leaves of common barberry bushes. The dust-like spores of the rust are spread by the wind for miles from barberry bushes to grain fields and from one grain field to another. Warm, moist weather aids the rapid development and spread of stem rust, just as the growth of corn, wheat, or other crops is affected by favorable weather conditions. Destroy common barberry bushes and reduce losses from stem rust.



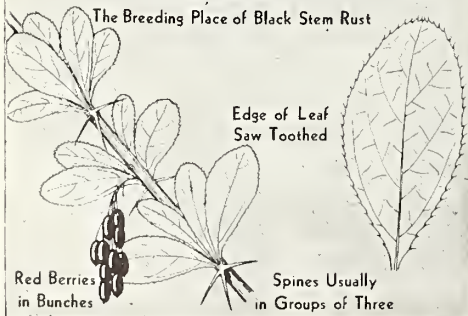
# Learn to Know Common Barberry



## COMMON BARBERRY

HARMFUL

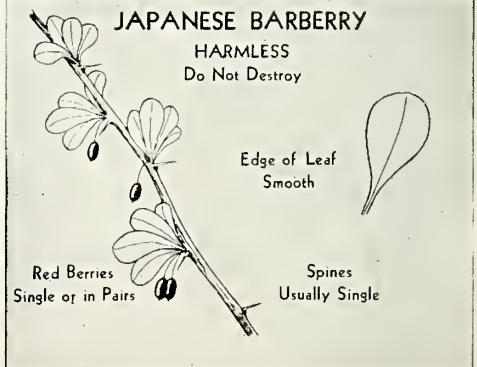
The Breeding Place of Black Stem Rust



## JAPANESE BARBERRY

HARMLESS

Do Not Destroy



Report common barberry bushes you may find, to the Barberry Eradication Office in your State, your Agricultural College, your State Department of Agriculture, or the Barberry Eradication Office, United States Department of Agriculture, Washington, D.C.



pleting the survey in Hamilton, Franklin, and Jackson Counties the men moved to the northern part of the State, where they worked in Stephenson, Lake and Kane Counties. Bushes were reported in Lee, Will, Kendall, DuPage, Cook, Iroquois, Ford, Menard, Sangamon, Livingston, and Vermillion Counties. The bushes were destroyed, but no other survey was made in these counties.

Warren Township, Lake County, has been the home of the largest area of escaped common barberry bushes in Illinois. More than 15,000 bushes have been destroyed in this locality since the beginning of the campaign. One squad assigned to this township during 1930 destroyed 8,600 barberry bushes on 52 different properties.

Whiteside County was found to have several areas of escaped barberry bushes. On one farm north of Sterling more than 3000 barberries were found escaped from cultivation. Others near Morrison and Fulton had quite a number of bushes. In fact, areas of escaped barberries have been found in nearly all of the northern counties in Illinois. This makes it necessary to carefully survey the territory in all of these counties.

Experience has shown that counties having many fruit-bearing barberry bushes, and which have a considerable area of uncultivated land near-by, are most likely to have bushes growing wild. However, prairie counties, such as Livingston, also may have areas of escaped bushes. During October, 1930, the class in agriculture at the Chenoa High School found such an area north of Chenoa. All of these bushes were growing wild as a result of seed scattered from a planted hedge at a near-by farm house. The bushes were found in hedge fences and along rows of willow trees. This further demonstrates that a well-informed public is a great asset in eradicating this pest of the small-grain crop.

### Eradication

Most of the bushes which have been found in the last few years have been killed by treating them with salt or kerosene. It has been found that these chemicals are very practical and effective herbicides. There is a distinct advantage in favor of their use, because the chemicals will kill the roots as well as the tops, whereas in digging, there is always danger of leaving pieces of roots which will sprout and grow. Five hundred tons of salt have been used in Illinois for killing barberry bushes since 1923.

### Educational Activities

Statewide and local newspapers, together with circular letters and fair demonstrations, have been used extensively to furnish the general public with information pertaining to the barberry eradication campaign. Stories of a general nature, distributed by the extension editor of the College of Agriculture, and feature stories published in farm papers have been exceptionally helpful as part of the educational program.

High schools, grade schools, and rural schools of Northern Illinois were furnished with lesson material in 1930. The new literature file boxes furnished by the Conference for the Prevention of Grain Rust were given out with lesson material to each of the rural schools in Carroll, Jo Davies, Stephenson, Winnebago, Boone, McHenry, Lake, Will, LaSalle, DeKalb, Bureau, and Putnam Counties. In addition lesson material was furnished to the rural schools of Kankakee and Lee Counties. Valuable assistance has been given by school teachers and pupils by locating and reporting barberry bushes. In several instances they have volunteered their help in eradicating the bushes. All of the work of eradicating the area near Chenoa was done by the vocational agriculture class under the supervision of Mr. J. A. Twardock.

# COMMON SALT KILLS BARBERRY BUSHES AND PREVENTS SPROUTING



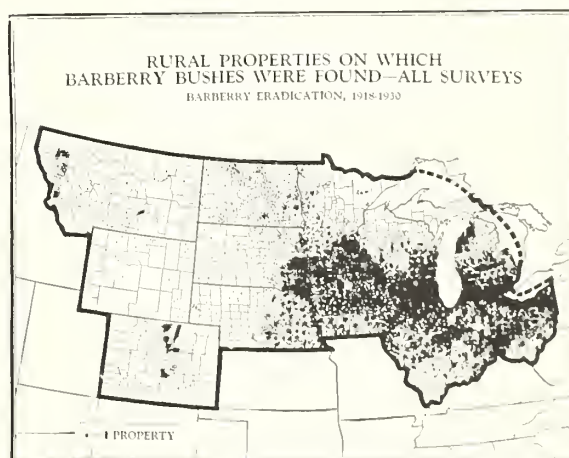
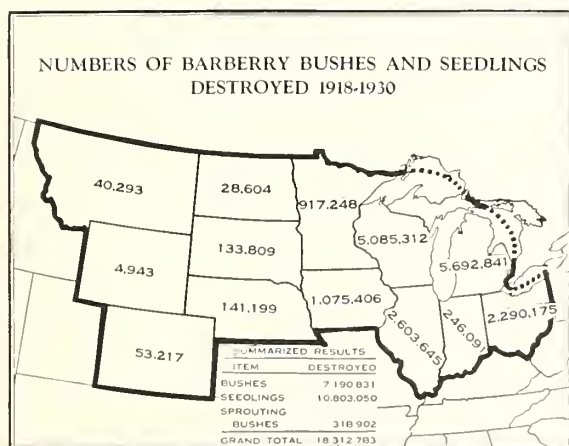
## SALTING A BUSH



## SPROUTS FROM DUG BUSH

Birds, animals and man chiefly are responsible for the wide distribution of the seeds of common barberries. Every fence row, thicket, pasture or wood is a possible hiding place for these bushes.

Every man, woman and child should consider it his or her duty to look for and report common barberry bushes.



More than 18 million sources of black stem rust  
were removed 1918-30

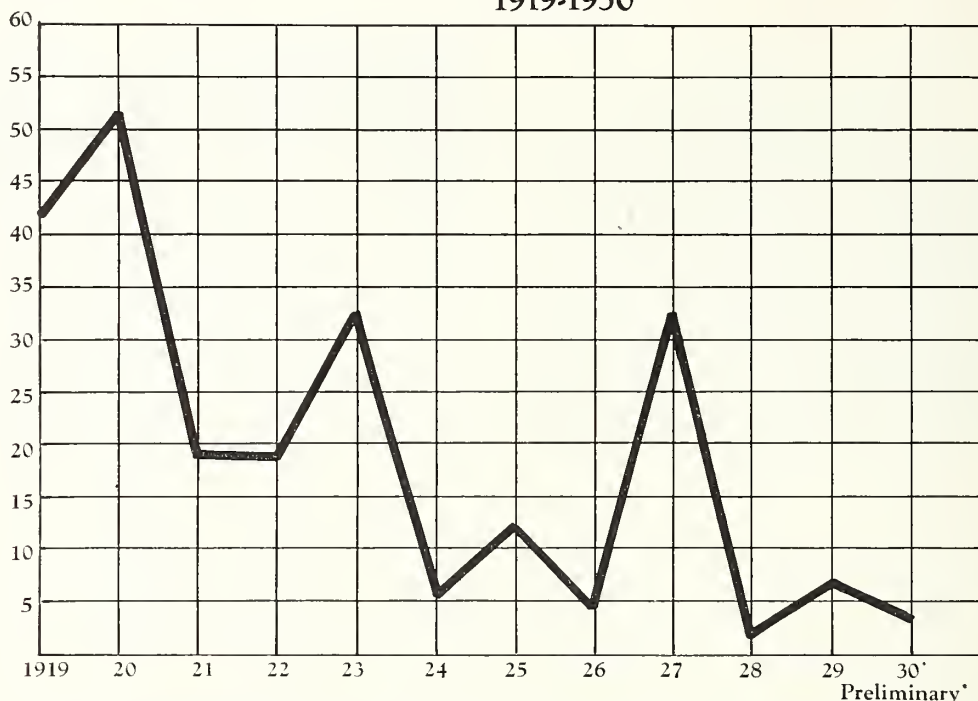
Prepared by the Rust Prevention Association, 300 Lewis Building, Minneapolis, Minn., in co-operation with Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D.C.



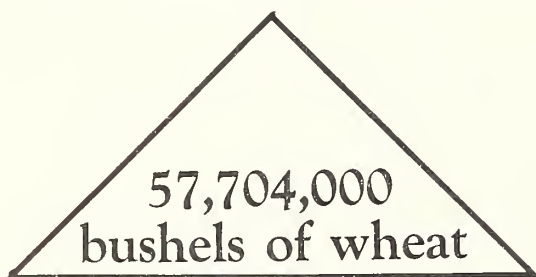
# Barberry Eradication Pays

In Millions  
of Bushels

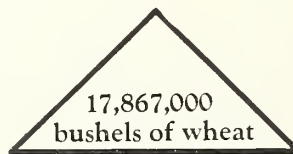
Wheat losses in Barberry Eradication Area  
1919-1930



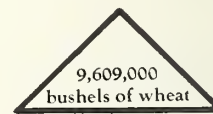
The losses to small grain crops caused by black stem rust have been reduced since the beginning of the barberry eradication campaign in 1918. The breeding of rust-resistant varieties, the use of early maturing varieties, and the sowing of crops early, have aided in this reduction.



Average annual loss  
five-year period  
1916-1920



Average annual loss  
five-year period  
1921-1925



Average annual loss  
five-year period  
1926-1930

Millions of bushels of oats, barley and rye also are  
damaged each year by black stem rust

Rust shriveled grain always is discounted

Destroy all Common Barberries—Reduce Losses from Stem Rust.  
Receive the Highest Available Price for Grain.

In December, 1928, the National Rust Busters Club was announced in Illinois and 25 boys and girls have qualified for membership since that time. Two rural school boys in Whiteside County were the first members to qualify by finding and reporting an area of escaped barberry bushes near their school. The requirements for membership have been announced through the newspapers and by letters sent with the study material distributed to the schools. The finding of the bushes reported by the "Rust Busters" has been of real value to the campaign and it is hoped that many more school children will qualify for membership.

#### REDUCTION OF RUST LOSSES

The amount of rust damage both in Illinois and in the twelve other States cooperating in the barberry eradication campaign has been decreasing steadily as the number of barberry bushes that have been destroyed increased. The average annual loss of wheat in the barberry eradication area is about one-third less than at the beginning of the campaign. The amount of damage from rust varies with the weather conditions, but it has shown a downward trend. During the past four years the amount of rust damage has been very slight in Illinois.

In the beginning of the campaign barberry bushes were distributed over the State, as shown by the accompanying map. As the areas cleared of bushes become larger the likelihood of severe rust epidemics starting in the early spring becomes more and more remote.

#### OTHER RUSTS IN ILLINOIS

There are several other kinds of grain rust besides

black stem rust which occur in Illinois. The orange leaf rust of wheat and the crown rust of oats are the most common. These rusts frequently become sufficiently severe to cause damage. They should not be confused with black stem rust because they are caused by different organisms which are not carried by common barberry bushes.

### CONCLUSION

Black stem rust is on the decrease in Illinois. Since 1918 more than 2½ million rust susceptible barberry bushes have been destroyed in the State. Common barberry bushes have been found in every conceivable place. Bushes have been planted in lawns, gardens, orchards, hedges, foundation plantings, parks, and cemeteries. Birds and other agencies have disseminated the seeds and escaped barberry bushes have sprung up in woodlands, fences, windbreaks, orchards, pastures, vacant lots and along railroads, creeks, and rivers.

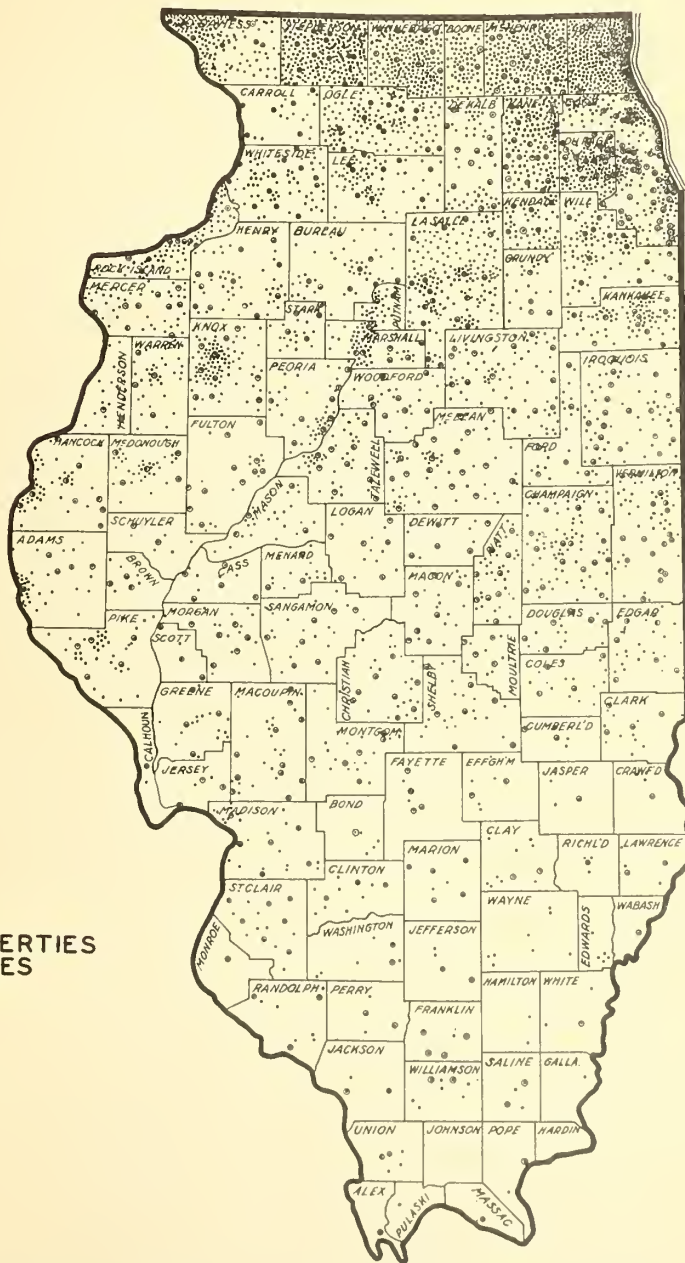
Schools and other organizations have willingly supported the barberry eradication campaign. Twenty-five school children have found and reported barberry bushes in the past two years.

Since salt has been used as a killing agent practically no sprouts have grown from eradicated barberry bushes. Observations have shown that areas around old locations of common barberry bushes must be reinspected at intervals of a few years to find and destroy the bushes which may have grown from seeds. Seedlings have been known to appear even after the seed remained dormant for five or more years. Obviously, the fight against common barberry bushes must continue. Report the location of bushes and seedlings which may be growing in your community to the Office of Barberry Eradication, Box 72, Urbana, Illinois. or to your Agricultural College.



# PROPERTIES HAVING BARBERRY BUSHES 1918-1930

ILLINOIS



15,265 PROPERTIES  
2,603,645 BUSHES

- FARMS HAVING BARBERRY BUSHES
- TOWNS HAVING BARBERRY BUSHES

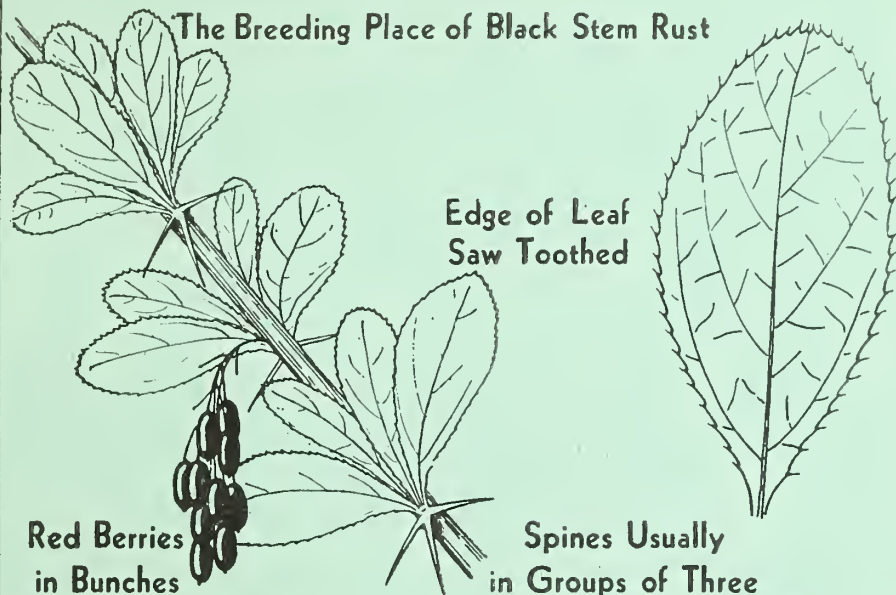


# Common Barberry Spreads Black Stem Rust

## COMMON BARBERRY

HARMFUL

The Breeding Place of Black Stem Rust



Edge of Leaf  
Saw Toothed

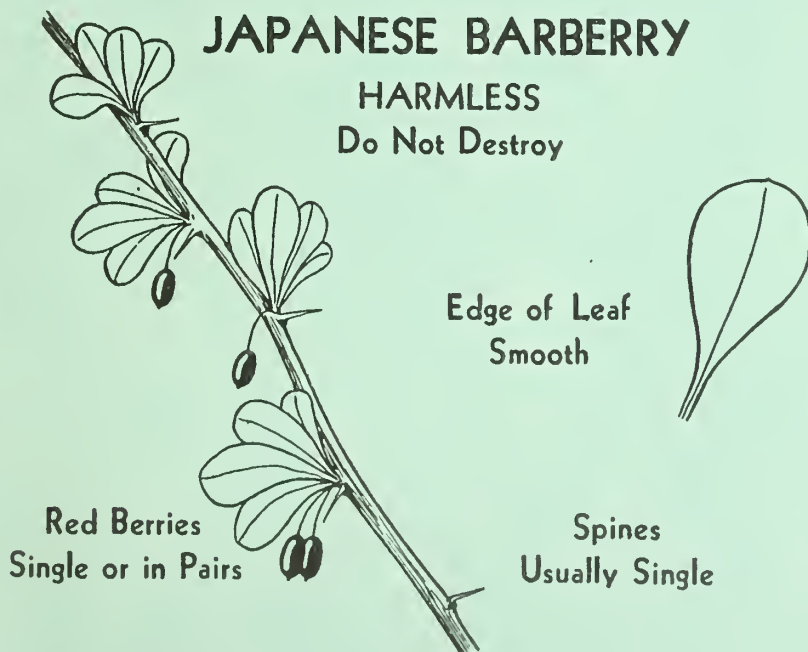
Red Berries  
in Bunches

Spines Usually  
in Groups of Three

## JAPANESE BARBERRY

HARMLESS

Do Not Destroy



Edge of Leaf  
Smooth

Red Berries  
Single or in Pairs

Spines  
Usually Single

**Look For and Report All Common Barberry Bushes**

*To the State Leader of Barberry Eradication, in care of your State Department of Agriculture or your State Agricultural College.*



# Common Barberry Bushes

*spread*

## *Black Stem Rust*

*to*

WHEAT, OATS,  
BARLEY, RYE,  
*and* Many Wild  
Grasses

**T**HIS Progress Report is prepared and printed by the Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C. The cover is furnished by the Conference for the Prevention of Grain Rust, 300 Lewis Building, Minneapolis, Minnesota.